

**Notice of Allowability**

Application No.

10/535,465

Applicant(s)

WIEMKER, RAFAEL

Examiner

Nancy Bitar

Art Unit

2624

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 05/17/2005.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 04/03/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## DETAILED ACTION

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Tom London on 9/14/2007.

The application has been amended as follows:

Claim 4 (Amended): A method as claimed in claim 1 [or 3], characterized in that the predetermined distance difference value is zero.

Claim 12(Amended): A method as claimed in claim 11, characterized in that the boundary is determined in that

a spatial co-variant matrix is calculated from all pixels

- which are situated at the edge of the region growth in the growth phase [in which in the fourth filtering operation one of the conditions in conformity with the claims 5 to 9 was satisfied], and
- whose distance value is below a given value or which are situated in the edge zone of an image structure,

a main component analysis is calculated from the co-variant matrix and

-the eigenvector of the smallest eigenvalue resulting from the main component analysis is used as the surface normal to the boundary.

Claim 14 (Amended): A computer readable medium storing a computer program for forming an image of body structures from an image data set, [including programming means] which carry out the steps of the methods disclosed in claim 1.

2. Claims 1-14 are allowed.

3. The following is an examiner's statement of reasons for allowance:

The prior art of record fails to teach or suggest: "third filtering operation is performed in which those previously selected pixels remain selected for which the surrounding pixels, situated at a distance corresponding exactly to the distance value of the pixel, have a distance value which is a predetermined distance difference value smaller than the distance value of the pixel to be tested itself, b) forming a marked image data set from the image data set by marking the pixels having been selected after the last filtering operation in the binary data set, and c) forming the image of the body structure from the marked image data set. Hu et al. (USPN 6,396,939 B1) disclose wherein first providing a plurality of digital images representing consecutive slices of the structure, the set of images is then divided into groups for which initial substructures center position are estimated. Using this information, the pixels corresponding to each substructure and common to all the images in the group are determined, iterations are performed between these two last steps until the best candidates are obtained, the method consists then in estimating the substructures

center position in each image of the group, after the substructures have been identified in each image, the images are then processed to remove noise in the substructures, in the rest of the structure and outside the structure; whereas Seissler et al. (US 2004/0022424 A1) disclose a method for separating the individual subjects of an anatomical structure segmented from a datasets of medical examination procedures. The Examiner finds no reason or motivation to combine the above references in an obviousness rejection thus placing the application in condition for allowance.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

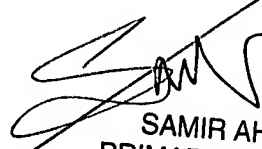
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nancy Bitar whose telephone number is 571-270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on 571-272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nancy Bitar

9/14/2007



SAMIR AHMED  
PRIMARY EXAMINER